

RECEIVED

JUL 15 2002

TECH CENTER 1600/2900

st96042splt.ST25
SEQUENCE LISTING

<110> ICARD-LIEPKALNS, Christine
MALLET, Jacques
RAVASSARD, Philippe

<120> POLYPEPTIDES OF THE "BASIC-HELIX-LOOP-HELIX" bHLH FAMILY, CORRESPONDING NUCLEIC ACID SEQUENCES

<130> ST96042AUS

<140> 09/595,947

<141> 2000-06-16

<150> FR96/15651

<151> 1996-12-19

<150> PCT/FR97/02368

<151> 1997-12-19

<150> US09/331,356

<151> 1997-12-19

<160> 28

<170> PatentIn version 3.0

<210> 1

<211> 1460

<212> DNA

<213> Rattus norvegicus

<400> 1

gcaggtagcg agaggagcag tccctgggcc cccgttgctg attggcccgt ggcacaggca	60
gcagcccggc aggcacgctc ctggtccggg cagagcagat aaagcgtgcc aggggacaca	120
cgattagcag ctcaagaagtc cctctgggtc tcaccactgc acagaggccg aggaccccct	180
ccgagcttct ttgctgcctc cagacgcaat ttactccagg cgagggcgcc tgcagctcag	240
caaaaacttcg aagcgagcag aggggttcag ctatccaccg ctgcttgact ctgaccaccc	300
gcagctctct gttcttttga gcccgagta actaggtaac atttaggaac ctccaaaggg	360
tagaagaggg gagtgggtgg gcgtactcta gtccgcgctg gactgacctc taagtcagag	420
actgtcacac ccccttcca ttttttcca acctcaggat ggcgcctcat cccttggatg	480
cgcccaccat ccaagtgtcc caagagacc agcaaccctt tcccggagcc tcggaccacg	540
aagtgtctcag ttccaattcc accccaccta gcccactct cgtaccgagg gactgctccg	600
aagcagaagc aggtgactgc cgagggacat cgaggaagct ccgtgcgcgg cgcgaggggc	660
gcaacaggcc caagagcgag ttggcactga gcaagcagcg acgaagccgg cgcaagaagg	720
ccaacgaccg ggagcgcaac cgcattgaca accttaactc cgcgctggat gcgctgcgcg	780
gtgtcctgcc caccttcccg gatgacgcca aacttataaa gatcgagacc ctgcgcttcg	840
cccacaacta catttgggca ctgactcaga cgctgcgcat agcggaccac agcttctacg	900

st96042sqli.ST25

```

gccccgagcc ccctgtgccc tgtgggggagc tgggaagccc gggagggggc tccagcggcg      960
actggggctc tatctactcc ccagtttccc aagctggtag cctgagcccc acagcctcat      1020
tggaggagtt ccctggcctg caggtgcccc gctccccatc ctgtctgctc ccgggcaccc      1080
tgggtgttctc agacttcttg tgaagggccc aaacaggccc tgggcggtgg gcgctggcag      1140
aaagggaggg agtcagagct gtctgaaatg gaaggtagtg gaggcactcg agcatctcgc      1200
cccttctggc tttcattagt caggtccctg atttaaccag gattcgaca gttccttgct      1260
gctgtgcgtg cacaaaggac attgcaggct gatctcctct taaccctcct cagtgtggcc      1320
acctcaaact cccgctccaa gcagaggaga gccgtagcac taaatagttg ggagactccc      1380
atacttctg gtgactccgc cctctttcaa atctgcgggc ctccaaccac cgctttctcc      1440
agagtgcact aatccagtgt                                     1460

```

<210> 2
 <211> 24
 <212> PRT
 <213> Artificial

<220>
 <223> peptide fragment of bHLH protein

<400> 2

```

Ala Ala Thr Lys His Gly Met Gly Ile Gly Ala Gly Cys Gly Cys Ile
1           5           10          15

```

```

Asp Lys Cys Gly Cys Arg Tyr Gly
                20

```

<210> 3
 <211> 24
 <212> PRT
 <213> Artificial

<220>
 <223> peptide fragment of bHLH protein

<400> 3

```

Gly Gly Cys Ser Arg Asp Thr Tyr Thr Cys Ala Gly Gly Gly Thr Ser
1           5           10          15

```

```

Tyr Asx Gly Ala Tyr Cys Thr Thr
                20

```

<210> 4
 <211> 25
 <212> DNA
 <213> Artificial

<220>
 <223> primer

<400> 4

aaccttaact ccgcgctgga tgcgc

25

<210> 5
 <211> 18
 <212> DNA
 <213> Artificial

<220>
 <223> primer

<400> 5
 cgcggtgtcc tgcccacc

18

<210> 6
 <211> 6
 <212> DNA
 <213> Artificial

<220>
 <223> DNA sequence of E box

<400> 6
 caggtg

6

<210> 7
 <211> 6
 <212> DNA
 <213> Artificial

<220>
 <223> DNA sequence of mutated E box

<400> 7
 tccgtg

6

<210> 8
 <211> 214
 <212> PRT
 <213> Rattus norvegicus

<400> 8

Met Ala Pro His Pro Leu Asp Ala Pro Thr Ile Gln Val Ser Gln Glu
 1 5 10 15

Thr Gln Gln Pro Phe Pro Gly Ala Ser Asp His Glu Val Leu Ser Ser
 20 25 30

Asn Ser Thr Pro Pro Ser Pro Thr Leu Val Pro Arg Asp Cys Ser Glu
 35 40 45

Ala Glu Ala Gly Asp Cys Arg Gly Thr Ser Arg Lys Leu Arg Ala Arg
 50 55 60

Arg Gly Gly Arg Asn Arg Pro Lys Ser Glu Leu Ala Leu Ser Lys Gln
 65 70 75 80

Arg Arg Ser Arg Arg Lys Lys Ala Asn Asp Arg Glu Arg Asn Arg Met
 85 90 95

st96042sqli.ST25

His Asn Leu Asn Ser Ala Leu Asp Ala Leu Arg Gly Val Leu Pro Thr
 100 105 110
 Phe Pro Asp Asp Ala Lys Leu Thr Lys Ile Glu Thr Leu Arg Phe Ala
 115 120 125
 His Asn Tyr Ile Trp Ala Leu Thr Gln Thr Leu Arg Ile Ala Asp His
 130 135 140
 Ser Phe Tyr Gly Pro Glu Pro Pro Val Pro Cys Gly Glu Leu Gly Ser
 145 150 155 160
 Pro Gly Gly Gly Ser Ser Gly Asp Trp Gly Ser Ile Tyr Ser Pro Val
 165 170 175
 Ser Gln Ala Gly Ser Leu Ser Pro Thr Ala Ser Leu Glu Glu Phe Pro
 180 185 190
 Gly Leu Gln Val Pro Ser Ser Pro Ser Cys Leu Leu Pro Gly Thr Leu
 195 200 205
 Val Phe Ser Asp Phe Leu
 210

<210> 9
 <211> 1330
 <212> DNA
 <213> Homo sapiens

<400> 9
 cctcggaccc cattctctct tctttttctcc tttggggctg gggcaactcc caggcggggg 60
 cgctgcagc tcagctgaac ttggcgacca gaagcccgt gagctcccca cgccctcgc 120
 tgctcatcgc tctctattct tttgcgccg tagaaaggta atatttgag gccttcgagg 180
 gacgggcagg ggaaagagg atcctctgac ccagcggggg ctgggaggat ggctgttttt 240
 gttttttccc acctagctc ggaatcgcg actgcgccgt gacggactca aacttaccct 300
 tccctctgac cccgcgctag gatgacgcct caaccctcgg gtgcgcccac tgtccaagtg 360
 acccgtgaga cggagcggtc cttccccaga gcctcggaag acgaagtgac ctgccccacg 420
 tccgccccgc ccagccccac tcgcacaccg gggaaactgcg cagaggcgga agagggaggc 480
 tgccgagggg ccccaggaa gctccgggca cggcgcgggg gacgcagccg gcctaagagc 540
 gagttggcac tgagcaagca gcgacggagt cggcgaaaga aggccaacga ccgcgagcgc 600
 aatcgaatgc acgacctca ctcggcactg gacgccctgc gcggtgtcct gcccaccttc 660
 ccagacgacg cgaagctcac caagatcgag acgctgcgct tcgcccacaa ctacatctgg 720
 gcgctgactc aaacgctgcg catagcggac cacagcttgt acgcgctgga gccgcggcg 780
 ccgcaactgc gggagctggg cagcccaggc ggtccccccg gggactgggg gtccctctac 840
 tccccagtct ccaggtctgg cagcctgagt cccgcgcgct cgctggagga gcgacccggg 900
 ctgctggggg ccacctcttc cgctgcttg agcccaggca gtctggcttt ctcagatttt 960

st96042sqli.ST25

```

ctgtgaaagg acctgtctgt cgctgggctg tgggtgctaa gggtaagggg gagggagggg 1020
gccgggagcc gtagaggggtg gccgacggcg gcggccctca aaagcacttg ttccttctgc 1080
ttctccctag ctgacccttg gccggccag gcctccacgg gggcggtagg ctgggttcat 1140
tccccggccc tccgagccgc gccaacgcac gcaacccttg ctgctgcccg cggaagtgg 1200
gcattgcaaa gtgcgctcat tttaggcttc ctctctgcca ccacccata atccattca 1260
aagaatacta gaatggtagc actaccggc cggagccgcc caccgtcttg ggtcgcccta 1320
ccctcactca 1330

```

```

<210> 10
<211> 214
<212> PRT
<213> Homo sapiens

```

```

<400> 10

```

```

Met Thr Pro Gln Pro Ser Gly Ala Pro Thr Val Gln Val Thr Arg Glu
1          5          10          15
Thr Glu Arg Ser Phe Pro Arg Ala Ser Glu Asp Glu Val Thr Cys Pro
20        25        30
Thr Ser Ala Pro Pro Ser Pro Thr Arg Thr Pro Gly Asn Cys Ala Glu
35        40        45
Ala Glu Glu Gly Gly Cys Arg Gly Ala Pro Arg Lys Leu Arg Ala Arg
50        55        60
Arg Gly Gly Arg Ser Arg Pro Lys Ser Glu Leu Ala Leu Ser Lys Gln
65        70        75        80
Arg Arg Ser Arg Arg Lys Lys Ala Asn Asp Arg Glu Arg Asn Arg Met
85        90        95
His Asp Leu Asn Ser Ala Leu Asp Ala Leu Arg Gly Val Leu Pro Thr
100       105       110
Phe Pro Asp Asp Ala Lys Leu Thr Lys Ile Glu Thr Leu Arg Phe Ala
115       120       125
His Asn Tyr Ile Trp Ala Leu Thr Gln Thr Leu Arg Ile Ala Asp His
130       135       140
Ser Leu Tyr Ala Leu Glu Pro Pro Ala Pro His Cys Gly Glu Leu Gly
145       150       155       160
Ser Pro Gly Gly Pro Pro Gly Asp Trp Gly Ser Leu Tyr Ser Pro Val
165       170       175
Ser Gln Ala Gly Ser Leu Ser Pro Ala Ala Ser Leu Glu Glu Arg Pro
180       185       190
Gly Leu Leu Gly Ala Thr Ser Ser Ala Cys Leu Ser Pro Gly Ser Leu
195       200       205
Ala Phe Ser Asp Phe Leu
210

```

st96042sqli.ST25

<210> 11
 <211> 18
 <212> DNA
 <213> Artificial

<220>
 <223> primer

<400> 11
 caacgaccgg cagcgcaa

18

<210> 12
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <223> primer

<400> 12
 gccagatgt agttgtgggc gaag

24

<210> 13
 <211> 60
 <212> DNA
 <213> Artificial

<220>
 <223> primer

<220>
 <221> misc_feature
 <223> n=a or t or g or c

<400> 13
 atcgttgaga ctcgtaccag cagagtcacg agagagacta cacggtactg gnnnnnnnnnn

60

<210> 14
 <211> 20
 <212> DNA
 <213> Artificial

<220>
 <223> primer

<400> 14
 agacgacgag aagctcacca

20

<210> 15
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <223> primer

<400> 15

gctcaccaag atcgagacgc tgcg

24

<210> 16
<211> 25
<212> DNA
<213> Artificial

<220>
<223> primer

<400> 16
atcggttgaga ctcgtaccag cagag

25

<210> 17
<211> 25
<212> DNA
<213> Artificial

<220>
<223> primer

<400> 17
tcgtaccagc agagtcacga gagag

25

<210> 18
<211> 19
<212> DNA
<213> Artificial

<220>
<223> primer

<400> 18
ctgccagcct gggagactg

19

<210> 19
<211> 50
<212> DNA
<213> Artificial

<220>
<223> primer

<400> 19
ctgcatctat ctaatgctcc tctcgtacc tgctcactct gcgtgacatc

50

<210> 20
<211> 25
<212> DNA
<213> Artificial

<220>
<223> primer

<400> 20
gatgtcacgc agagtgcgca ggtag

25

st96042sqli.ST25

<210> 21
<211> 23
<212> DNA
<213> Artificial

<220>
<223> primer

<400> 21
agcctgggag actggggagt aga

23

<210> 22
<211> 24
<212> DNA
<213> Artificial

<220>
<223> primer

<400> 22
agagtgagca ggtagcgaga ggag

24

<210> 23
<211> 22
<212> DNA
<213> Artificial

<220>
<223> primer

<400> 23
cgctatgcgc agcgtttgag tc

22

<210> 24
<211> 25
<212> DNA
<213> Artificial

<220>
<223> primer

<400> 24
cctcggaccc cattctctct tcttt

25

<210> 25
<211> 24
<212> DNA
<213> Artificial

<220>
<223> primer

<400> 25
tgagtgaggg tagggcgacc caag

24

<210> 26
<211> 15
<212> DNA

<213> Artificial

st96042sqlt.ST25

<220>

<223> probe

<400> 26

aggaagctcc gggca

<210> 27

<211> 1381

<212> RNA

<213> Artificial

<220>

<223> probe

<400> 27

15

gggcgaauug ggcccgcacgu cgcaugcucc cggccgccau ggccgcggga uuugagugag 60
gguagggcga cccaagacgg ugggcggcuc cggccgggua gugcuaccu ucuagauuuc 120
uuugaauugg auuaugggu gguggcagag aggaggccua aaugagcgc acuuugcaau 180
gccacuucg cgcgggcagc agcaaggguu gcgugcuug gcgcggcucg gagggccggg 240
gaaugaacc agccuaccgc ccccguggag gccugggccg gccagggguc agcuaggag 300
aagcagaagg aacaagugcu uuugagggcc gccgccgucg gccaccucu acggcucccg 360
gcucccucc ucucccuac ccuagcacc cacagcccag cgacagacag guccuuucac 420
agaaaaucug agaaagccag acugccuggg cucaagcagg cggaagaggu ggcccccagc 480
agccccgguc gcuccuccag cgacgcggcg ggacucaggc ugccagccug ggagacuggg 540
gaguagaggg acccccaguc cccgggggga ccgccugggc ugcccagcuc cccgcagucg 600
ggcgccggcg gcuccagcgc guacaagcug ugguccgcu ugcgcagcgu uuagucagc 660
gcccagaugu aguugugggc gaagcgcagc gucucgauc uggugagcu cgcgucguc 720
gggaaggugg gcaggacacc gcgcaggcg uccagugccg aguugagguc gugcauucga 780
uugcgcucgc ggucguuggc cuucuucgc cgacuccguc gcugcuugcu cagugccaac 840
ucgcucuag gccggcugcg uccccgcgc cgugcccga gcuucccgg ggccccucgg 900
cagccuccu cuuccgccuc ugcgcaguuc cccggugugc gaguggggcu gggcgggcg 960
gacguggggc agguacauuc gucuuccgag gcucugggga aggaccgcuc cgucucacgg 1020
ucacuuggac agugggcgca cccgaggguu gaggcguau ccuacggcg ggucagaggg 1080
aaggguaagu uugaguccgu cacggcgag uccgcgauuc cgaggcuagg ugggaaaaa 1140
caaaaacagc cauccucca gccccgcug ggucagagga ucccucuuc ccugcccgu 1200
cccucgaagg ccuccaaaua uuaccuuuc accggcgcaa aagaauagag agcgaugagc 1260
agcgagggcc guggggagcu cagcgggcuu cuggucgca aguucagcug agcugcaggc 1320
gccccgccu gggaguugcc ccagcccaa aggagaaaag aagagagaau gggguccgag 1380

g

st96042sqli.ST25

1381

<210> 28
 <211> 1427
 <212> RNA
 <213> Artificial

<220>
 <223> probe

<400> 28

agcuaugcau ccaacgcguu gggagcucuc ccauaugguc gaccugcagg cggccgcgaa 60
 uucacuagug auuccucgga ccccauucuc ucuucuuuuc uccuuugggg cuggggcaac 120
 ucccaggcgg gggcgccugc agcucagcug aacuuggcga ccagaagccc gcugagcucc 180
 ccacggcccu cgcugcucan cgcucucuan ucuuuugcgc cgguaaaaag gaaauuuug 240
 gaggccuucg agggacgggc aggggaaaga gggauccucu gacccagcgg gggcugggag 300
 gauggcuguu uuuguuuuuu cccaccuagc cucggaucg cggacugcgc cgugacggac 360
 ucaaacuac ccuucccucu gaccccgccg uaggauagc ccucaacccu cgggugcgcc 420
 cacuguccaa gugacccgug agacggagcg guccuucccc agagccucgg aagacgaagu 480
 gaccugcccc acguccgccc cgcccagccc cacucgcaca ccggggaacu gcgcagaggc 540
 ggaagaggga ggcugccgag gggccccgag gaagcuccgg gcacggcgcg ggggacgcag 600
 ccggccuaag agcgaguugg cacugagcaa gcagcgacgg agucggcgaa agaaggccaa 660
 cgaccgag cgcaaucgaa ugcacgaccu caacucggca cuggacgccc ugcgcggugu 720
 ccugcccacc uucccagacg acgcgaagcu caccaagauc gagacgcugc gcuucgcccc 780
 caacuacauc ugggcgcuca cucaaagcu gcgcuaagcg gaccacagcu uguacgcgu 840
 ggagccgccc gcgcccacac gcggggagcu gggcagccca ggcggucccc ccggggacug 900
 gggguccuc uacuccccag ucucccaggc uggcagccug agucccgccg cgucgcugga 960
 ggagcgaccc gggcugcugg gggccaccuc uuccgcccug uugagcccag gcagucuggc 1020
 uuucucagau uuucugugaa aggaccuguc ugucgcuggg cugugggugc uaaggguaag 1080
 ggagagggag ggagccggga gccguagagg guggccgacg gcggcgcccc ucaaaagcac 1140
 uuguuccuuc ugcuuuccc uagcugaccc cuggccggcc caggccucca cgggggagggu 1200
 aggcuggguu cauuccccgg ccuuccgagc cgcgccaacg cacgcaaccc ugcugcugc 1260
 ccgcgcgaaug ugggcauugc aaagugcgcu cauuuuaggc cuccucucug ccaccacccc 1320
 auaauccau ucaaagaaua cuagaauugu agcacuaccc ggcggagcc gccaccguc 1380
 ugggugcgc cuaccucac ucaaaucgaa uucccgcgcc cgccaug 1427